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IS 15783 (2008): Road vehicles - Brake control levers for two and three wheeled motor vehicles [TED 4: Automotive Braking Systems]

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IS 15783 : 2008
(Superseding IS 10289 : 1982,
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सड़क वाहन — दो और तीन पहियों वाले मोटर वाहनों के लिए ब्रेक नियंत्रण लीवर — विशिष्टि

Indian Standard

ROAD VEHICLES — BRAKE CONTROL LEVERS FOR TWO AND THREE WHEELED MOTOR VEHICLES — SPECIFICATION

ICS 43.040.40; 43.140

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

July 2008 **Price Group 3**

Automotive Braking Systems, Vehicle Testing and Performance Evaluation Sectional Committee, TED 4

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by Automotive Braking Systems, Vehicle Testing and Performance Evaluation Sectional Committee had been approved by the Transport Engineering Division Council.

This standard covers the requirements of brake control levers of two and three wheeled vehicles. The object of this standard is to ensure uniformity in method of evaluation of strength requirements for brake levers used in scooters, motorcycles, mopeds and three wheelers. Earlier the following Indian Standards were published covering the requirements of brake control levers of two wheelers:

IS No.	*Title*
10289 : 1982	Specification for brake control levers for mopeds
10841 : 1984	Specification for front brake control lever for scooters and motorcycles
13493 : 1992	Automotive vehicles — Two wheelers — Method of evaluation of brake lever strength requirements

With the publication of this standard, the above standards shall be withdrawn.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

ROAD VEHICLES — BRAKE CONTROL LEVERS FOR TWO AND THREE WHEELED MOTOR VEHICLES — SPECIFICATION

1 SCOPE

1.1 This standard specifies requirements of hand-operated levers used for control of brake system of two and three wheeled motor vehicles fitted with handle bar.

1.2 The control levers complying with the requirements of this standard may be used as clutch control levers at the option of the vehicle manufacturer provided these are suitable to the application.

2 REFERENCE

The following standard contains provision, which through reference in this text, constitute provisions of this standard. At the time of publication the edition indicated was valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below:

IS No.	*Title*
2500 (Part 1) : 2000/ISO 2859-1: 1999	Sampling procedure for inspection by attributes: Part 1 Sampling schemes indexed by acceptance quality limit (AQL) for lot by lot inspection (*third revision*)

3 GENERAL REQUIREMENTS

3.1 The control levers shall have smooth surfaces without any harmful defects such as burrs, sharp edges etc. In addition, if these are manufactured by die casting, these shall be free of casting defects such as cracks, blow holes etc, and shall not discolour the hands of the driver.

3.2 All the edges of control levers shall be rounded off to a radius of at least 2.5 mm. The outer end of the lever shall have a spherical diameter of at least 14 mm.

3.3 The shape, dimensions and tolerances of control levers shall be as agreed between the supplier and the purchaser. The shape shall be suitable for actuation of the brakes and/or clutch of the vehicle. Typical shapes of the control levers are shown in Fig. 1 to 4.

3.4 The material and surface treatment requirements shall be as agreed between the supplier and the purchaser provided the requirements specified in **4** are satisfied.

4 PERFORMANCE REQUIREMENTS

4.1 Test Conditions

4.1.1 The test shall be conducted to demonstrate the capability of the control levers to sustain service load conditions, load being attributed to gripping forces, which generate the braking forces. Other load conditions due to possible collision, overturns or misuse are excluded.

4.1.2 The test shall be conducted on test samples supplied by the manufacturer, which is representative of the production.

4.2 Test Procedure

4.2.1 General load distribution on brake lever is shown in Fig. 5. P_x is the load applied in the direction X as shown in Fig. 6.

4.2.2 Test shall be conducted by fixing the control lever on a fixture as illustrated in Fig. 6 and mounted on a compression testing machine capable of producing a rate of traverse of 30 mm/min.

4.2.3 The loading point A shall be set at the surface of lever at a distance of approx. 30 mm from the edge of the spherical diameter at the end of the lever (*see* Fig. 6). The setting shall be such that the curved surface of the lever near point A is substantially horizontal.

4.2.4 The vertical coordinate X shall be established with reference to point A at the rate of 30 mm/min velocity.

4.2.5 A vertical load is applied to point A as shown in Fig. 6 till the load reaches to a value of 250 N. (The compressor testing machine for applying the load should be set at the rate of traverse of 30 mm/min.) The load shall then be released when it reaches 250 N (25 kg). The residual deflection 'x' in the direction of 'X' is measured.

4.2.6 The test prescribed in **4.2.5** shall be repeated with a maximum vertical load of 400 N (40 kg).

4.2.7 Movement of lever due to clearance between mounting pins shall be neglected during testing.

4.3 Requirements

4.3.1 The strength of brake lever shall be considered satisfactory if no residual displacement is observed during the test as per **4.2.5** and not more than 5 mm residual displacement when tested as per **4.2.6**.

4.3.2 The control levers shall not show any evidence of breakage during the test.

5 MARKING

5.1 The brake control levers shall be marked with:

a) Manufacturer's name or trade-mark, and
b) RH or LH to indicate left hand or right hand.

5.2 BIS Certification Marking

The brake control levers may also be marked with the Standard Mark.

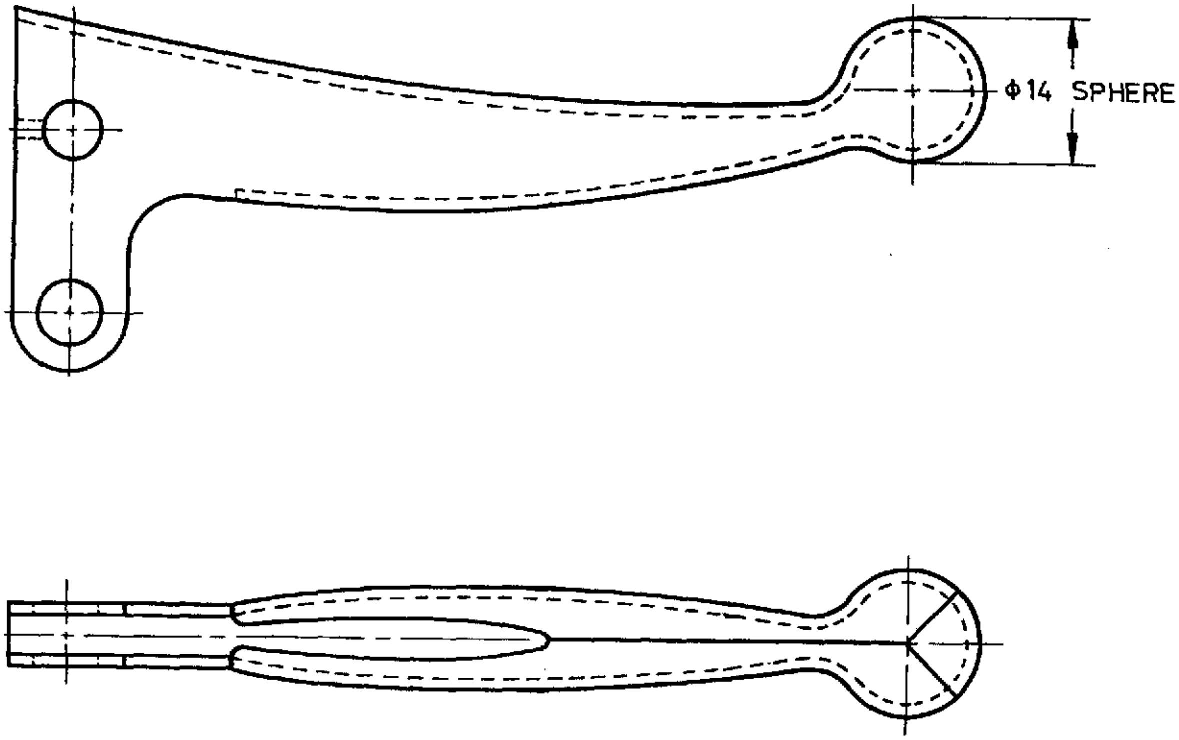
5.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to the manufacturers or producers may be obtained from the Bureau of Indian Standards.

6 PACKING

Each brake control lever shall be suitably wrapped and packed in cartons. Each carton shall have manufacturer's name or trade-mark, type of lever legibly printed on them.

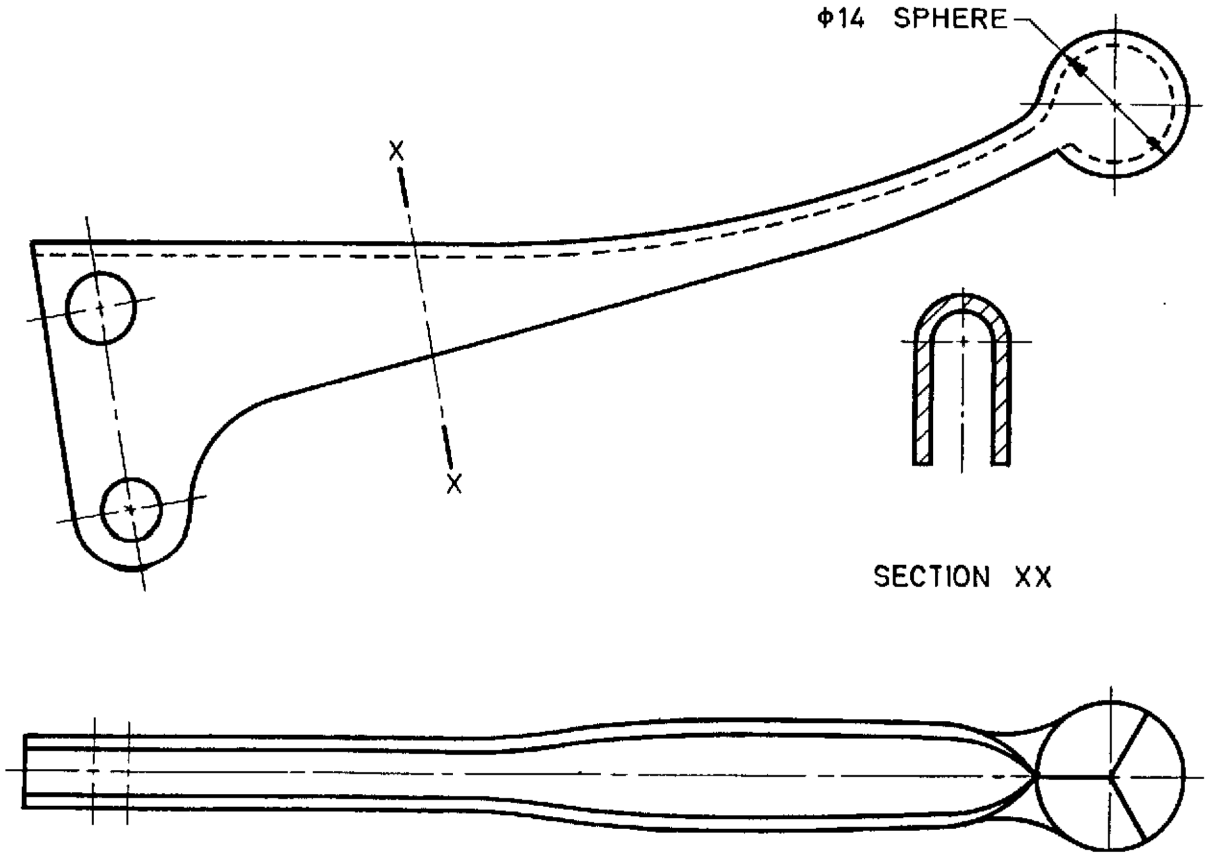
7 SAMPLING

7.1 Unless otherwise agreed to between the manufacturer and the purchaser the procedure given in IS 2500 (Part 1)/ISO 2859-1 shall be followed.



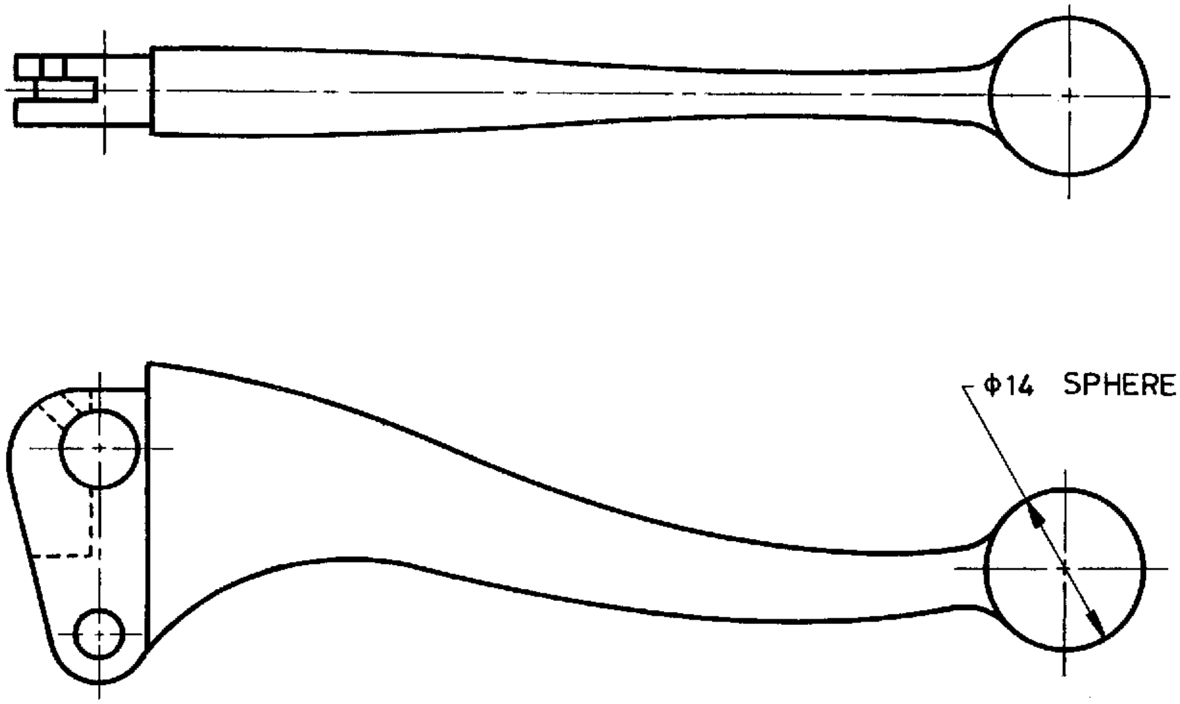
All dimensions in millimetres.

FIG. 1 SHEET METAL LEVER



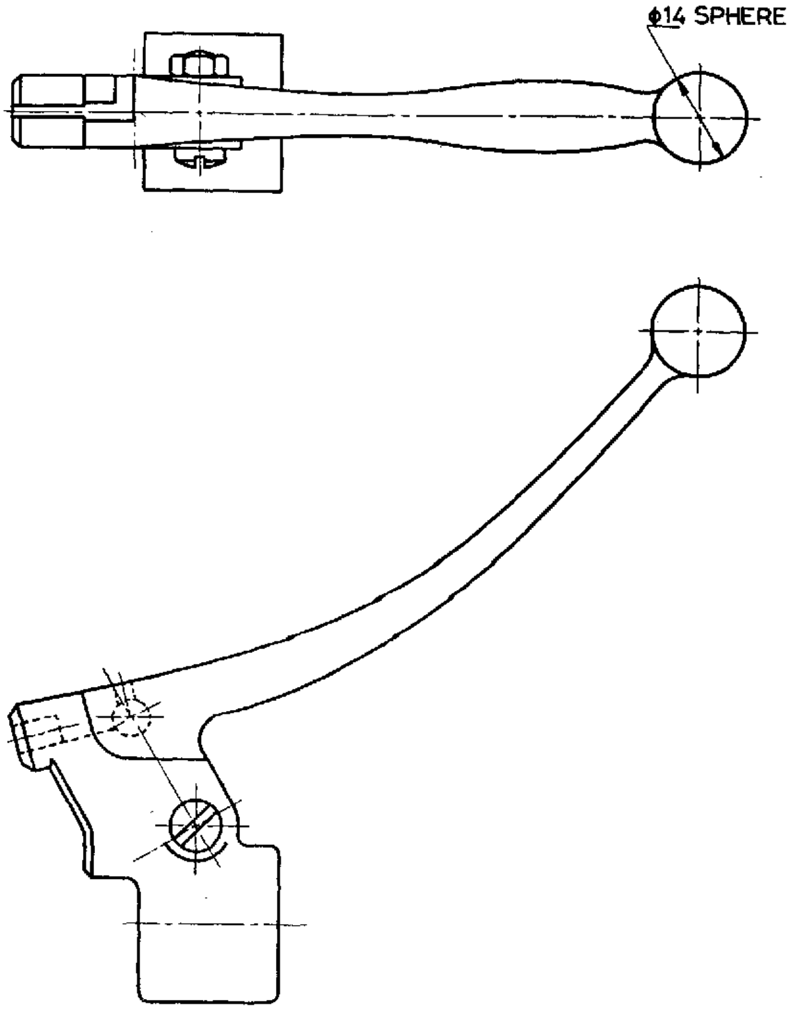
All dimensions in millimetres.

FIG. 2 SHEET METAL LEVER



All dimensions in millimetres.

FIG. 3 DIE CAST LEVER



All dimensions in millimetres.

Fig. 4 Die Cast Lever

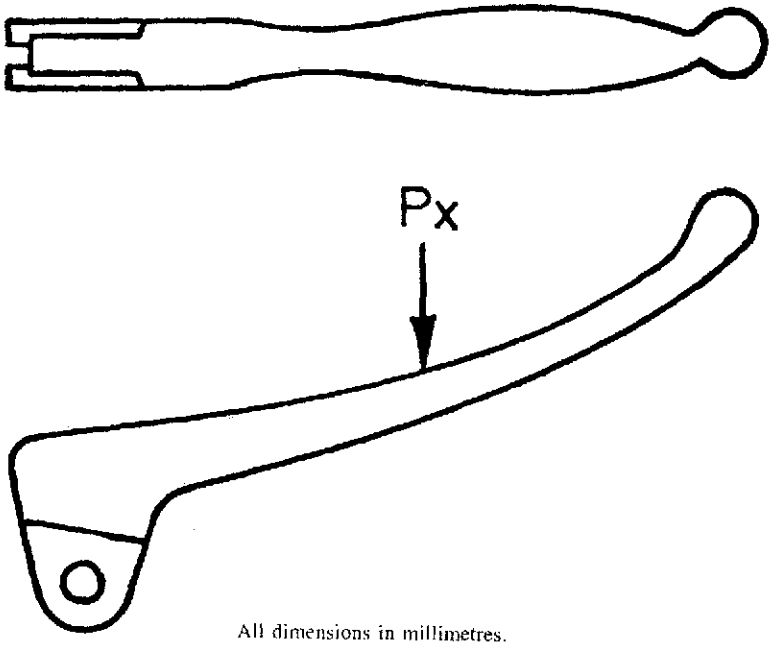


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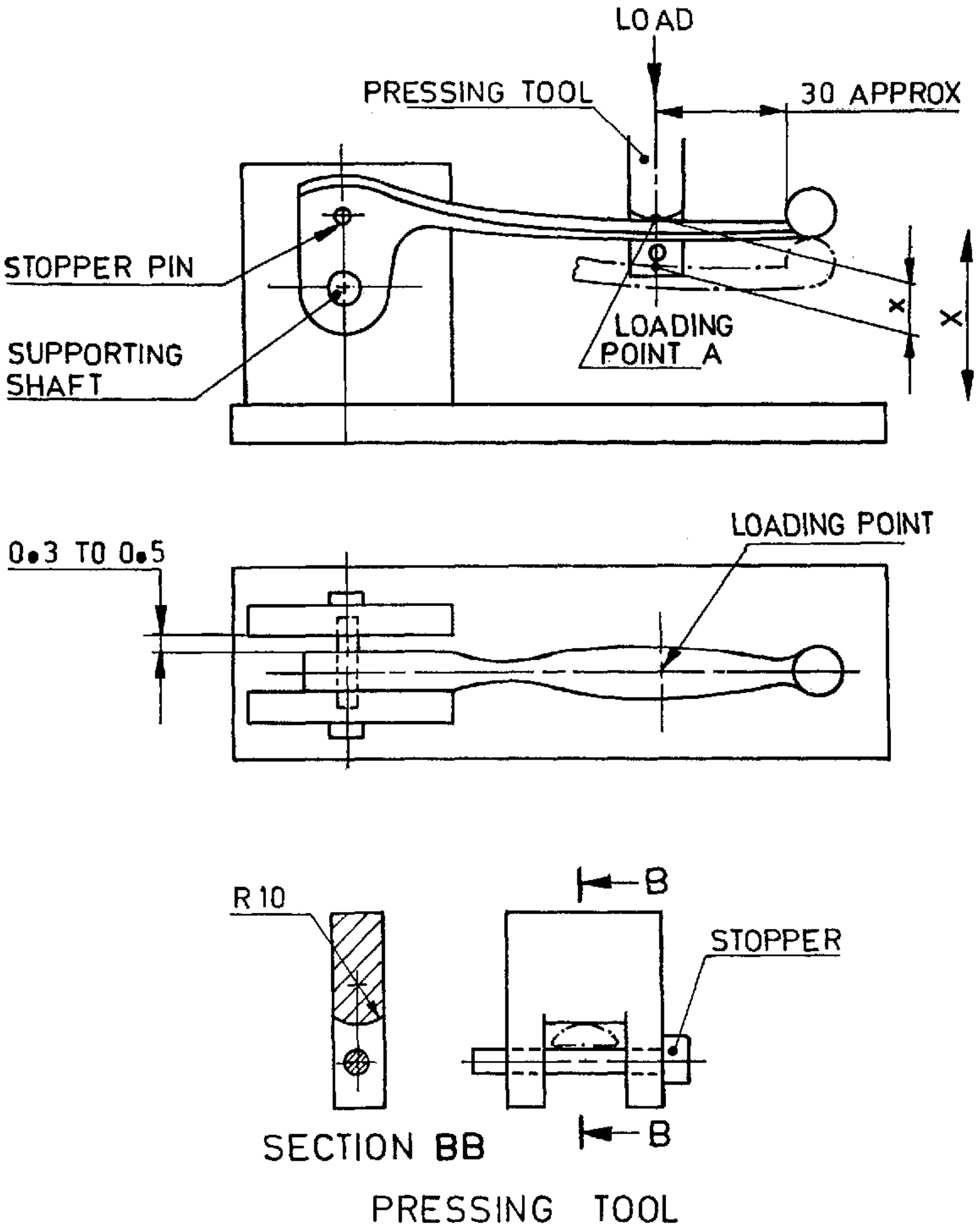
Fig. 5 Direction of Load Distribution on Lever



All dimensions in millimetres.

FIG. 6 TESTING ARRANGEMENT ON LEVER

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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